PLAGUES IN MAN
PUBLIC HEALTH & EPIDEMIOLOGY

I. INFECTIOUS DISEASE IN THE USA – THEN AND NOW
A. THEN (1800):
MORTALITY
>50% DUE TO INFECTION AGENTS
25% DUE TO TB ALONE
LIFE EXPECTANCY <50 YEARS
INFANT MORTALITY 50% IN SOME AREAS
PERTUSSIS, DIPHTHERIA
FLU, SMALLPOX, MEASLES
NO VACCINES (smallpox vaccine just introduced)
NO ANTIBIOTICS
NO OR LITTLE PUBLIC HEALTH (JOHN SNOW
INVESTIGATED CHOLERA OUTBREAK IN LONDON IN
1854 – THE BROAD STREET PUMP)
NO ASEPTIC SURGERY

B. NOW (1996):
MORTALITY
ABOUT 5% MORTALITY DUE TO I. D.
LIFE EXPECTANCY >70
TOTAL MORTALITY 2,314,000 (0.80% OF POP.)
1,661,700 (72%) CHRONIC DISEASE
79,000→(3.4%) PNEUMONIA/INFLUENZA
34,700↓ (1.5%) AIDS
1,202↓ (0.08%) TB
3,780↑ (0.04%) HEPATITIS (ALL TYPES)
320↓ (0.02%) MENINGITIS/ENCEPHALITIS

INFANT – 0.9% OF LIVE BIRTHS (1996)

(ARROWS INDICATE RECENT TRENDS)

II. CONTROL OF RESERVOIRS
A. ANIMALS AND INSECTS – ZOONOSIS
B. HUMAN CARRIERS [CHRONIC DISEASE]
C. PHYSICAL CONDITIONS

III. CONTROL OF TRANSMISSION
A. FOOD
1. MEATS AND POULTRY
2. FRESH AND FROZEN FOODS
3. CANNED FOODS

B. WATER
1. COMMUNITY WATER – WELLS & RESERVOIRS
2. WATER TREATMENT

C. AIR
IV. PREVENTION OF DISEASE - IMMUNIZATION
A. BACTERIAL AND VIRAL VACCINES
B. PEDIATRIC VACCINES
C. ADULT VACCINES
D. ANIMAL VACCINES [RABIES AND ANTHRAX]

V. ISOLATION OF DISEASE - QUARANTINE
A. HIGHLY COMMUNICABLE (& SERIOUS) DISEASES
B. LIST OF DISEASES:
   SMALLPOX, CHOLERA, PLAGUE, YELLOW FEVER, TYPHOID FEVER,
   RELAPSING FEVER [MENINGITIS & EBOLA]

VI. ERADICATION OF DISEASE
A. SMALLPOX - 1967-77 -- WORLD HEALTH ORGANIZATION (WHO)
B. POLIO - 1985-NOW ROTARY INTERNATIONAL & WHO
C. WHAT'S NEXT

VII. SURVEILLANCE
A. REPORTABLE DISEASES - 29 BACTERIAL, 14 VIRAL
B. NEWSLETTER - MMWR
C. REPORTING HIERARCHY
   1. HOSPITALS & PHYSICIANS
   2. COUNTY HEALTH DEPARTMENTS
   3. STATE EPIDEMIOLOGISTS
   4. CENTER FOR DISEASE CONTROL (CDC) IN ATLANTA
   5. WORLD HEALTH ORGANIZATION
D. INFLUENZA WATCH - ONE EXAMPLE

VIII. GLOBAL HEALTH CONSIDERATIONS
A. ENDEMIC DISEASES
B. IMMUNIZATIONS AND TRAVEL
C. QUARANTINE OF ANIMALS
D. FOOD AND WATER
E. PANDEMICS - THE INFLUENZA STORY

IX. EPIDEMIOLOGY
A. INTRODUCTION - TERMS AND DEFINITIONS
   1. EPIDEMIC, PANDEMIC, ENDEMIC, OUTBREAK
   2. MORBIDITY AND MORTALITY
   3. DISEASE PROGRESSION - STAGES & CHARTING
      a. EXPOSURE
      b. INFECTION
      c. INCUBATION - INCUBATION PERIOD
      d. ACUTE STAGE
      e. RESOLUTION
      f. SEQUELAE
B. WHAT IS EPIDEMIOLOGY ?
   1. STUDY OF EPIDEMICS- JOHN SNOW & CHOLERA
   2. RELATIONSHIPS OF MAN AND DISEASE AGENTS
   3. STUDY OF DISEASES IN POPULATIONS
      a. OCCURANCE
      b. DISTRIBUTION
      c. CONTROL
      d. SURVEILLANCE